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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/830,215	KUBOTA ET AL.	
	Examiner	Art Unit	
	Nikolas J. Uhlir	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *NONE* is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) *NONE* is/are objected to.

8)☐ Claim(s) *NONE* are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some.* c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. JP00/05692, filed on 8/24/00.

Specification

4. The abstract of the disclosure is objected to because it is more than one paragraph. Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities: It appears that the composition of example 11, as described on page 64 of the instant specification does not match up with the composition detailed for example 11 in table 1. In particular, example 11 as described on page 64 states that the polymer blend contains a spherical filler, whereas table 11 clearly indicates that no spherical filler is contained in this example.

Appropriate correction is required.

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 17 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. The term "essential component" in claim 17 is a relative term that renders the claim indefinite. The term "essential component" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The main issue with the term "essential component" is that it is a term that can be interpreted different ways by different individuals. What amount of polymer A or polymer B is required in order for these polymers to be the "essential component? Clarification is required.

9. Claims 20-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the instant case, claim 20 requires W_b to be in the range of 0-40, W_a to be in the range of 5-50, and W_a-W_b to be in the range of 10-40. It appears that the required W_b and W_a ranges are in error, as if W_b is permitted to be 0 and W_a is at either the minimum or maximum value of 5 or 50 respectively, the W_a-W_b range cannot be met. The same is true for claim 21, although with a different range. Correction is required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1-5, 11-15, 17-19, 22, and 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tojo et al. (US5965233).

12. Regarding the limitations of claim 1, wherein the applicant requires a biaxially oriented film comprising a polymer alloy composed of polyester and a thermoplastic resin other then the polyester, wherein microprotrusions having a height of 2-50nm are formed at a density of 1,000,000-90,000,000/mm^2 (1e6-9e7) on at least one surface.

13. Tojo et al. (hereafter Tojo) teaches a polymer film that comprises a base layer comprising a thermoplastic resin and a first film layer on one or both sides of the base layer, wherein the first film layer contains core shell particles, each consisting of a core and a shell, and a hydrophilic resin (column 3, lines 20-32). Tojo teaches that the first film layer exhibits surface protrusions in the range of 1,000,000-100,000,000 (1e6-1e8) per mm^2 (column 3, lines 45-48). Thus, applicant's requirement as to the number of protrusions is met. Regarding the height of the protrusions, Tojo teaches that the first film layer has a centerline average surface roughness (Ra) between 0.3-5nm (column 9, lines 20-23). It is the examiners position that the centerline average surface roughness is roughly equivalent to the applicants claimed "height" of the protrusions. Thus, as 5nm is completely encompassed within the applicants claimed range, this limitation is met. Last, it is noted that the shell of the core shell particles is typically a thermoplastic polymer, such as an acrylic (column 7, lines 14-20). Further, it is noted that suitable hydrophilic resins for the first film layer include polyesters that contain a terephthalic acid component (i.e PET) (column 6, lines 8-35). Thus, the limitations of claim 1

requiring a polyester and a thermoplastic polymer are met. Last, Tojo teaches biaxially orienting the film, as required by claim 1 (column 10, lines 40-65)

14. Regarding claim 2, wherein the applicant requires the number of protrusions to be in the range of 3e6-6e7/mm^2. Tojo teaches that the density of the protrusions is preferably 3e6-3e7/mm^2 (column 8, lines 33-41), which is completely encompassed by the range specified by claim 2. Thus, this limitation is met.

15. Regarding claim 3, wherein the applicant requires the height of the micro-protrusions to be in the range of 2-30nm. This limitation is met as set forth above for claim 1.

16. Regarding claim 4, wherein the applicant requires "at least some" of the micro protrusions to be made of polymer 1 or polymer 2. The examiner interprets "at least some" to mean that one or more of the protrusions are made of polymer 1 or polymer 2. Tojo teaches that the protrusions are cored by the core-shell particles in the first film layer (column 8, lines 32-40). Thus, "at least some" of the protrusions are made from polymer 1 or polymer 2.

17. Regarding claim 5, wherein the applicant requires 30% or more of the micro-protrusions to be made of polymer 1 or polymer 2. Although Tojo does not expressly state this limitation, the fact that Tojo teaches that the protrusions are produced by the core shell particles as stated in the section cited above for claim 4, it is logical to believe the most if not all of the particles are formed by the core shell particles, and thus polymer 2. Thus, this limitation is met.

18. Regarding claim 11, wherein the applicant requires polymer 1 to comprise polyethylene terephthalate. This limitation is met as set forth above for claim 1. A specific recitation of the use of PET can be found in example 1 of Tojo et al.

19. Regarding claims 12-13, wherein the applicant requires the number of protrusions having a height of 50nm or more to be 3000/mm^2 or less (claim 12), more specifically where the number of protrusions having a height >30nm is 1500/mm^2 or less. Although Tojo does not explicitly teach these limitations, Tojo does teach that the number of coarse protrusions is adventitiously minimized, as excessive numbers of coarse protrusions adversely affects the film (column 8, lines 1-10). Further, Tojo teaches that the ten point average surface roughness (the average of the 10 largest peak/valley distances in a film) is in the range of 10-100nm. Thus, when a film is formed having a 10 point average roughness of 10nm, the examiner takes the position that the limitations of claims 12 and 13 are met. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the 10 point average roughness to a desired range, in light of the teaching by Tojo that this property is a results effective variable that affects many films properties, including running durability and electromagnetic conversion characteristics (column 9, lines 25-36).

20. Regarding claim 14, wherein the applicant requires the film of claim 1 to be laminated as at least one outermost layer of a base layer. This limitation is met as set forth above for claim 1.

21. Regarding claim 15, wherein the applicant requires that the film of claim 1 be laminated as one of the outermost layers of a base layer, and another layer (C layer be

on laminated on the opposite side of the base layer from the layer of claim 1. As written, claim 15 is open to the A layer (layer of claim 1) and the C layer being the same material. As stated above for claim 1, Tojo teaches laminating a first film layer to one or both surfaces of a base layer (column 3, lines 24-28). Thus, the limitations of claim 15 are met when the first film layer is formed on both sides of the base layer. Further, Tojo specifically teaches utilizing the first film layer on one side of a base layer and laminating a second film layer on the opposite side of the base layer (column 9, lines 40-46). Thus, these limitations are met.

22. With respect to claim 17, wherein the applicant requires the base layer to comprise the polymer 1 or the polymer alloy composed of polymer 1 and polymer 2. Tojo teaches that a suitable material for the base layer is biaxially oriented PET, which is included in the first film layer (column 3, lines 55-62).

23. Regarding claims 18 and 19, these limitations are met as set forth above for claims 12 and 13.

24. Regarding claim 22, wherein the applicant requires the base layer to comprise substantially no inert particles. Tojo specifically teaches that the base layer can comprise substantially no inert particles (column 4, lines 22-24)

25. With respect to claims 27-29, wherein the applicant requires a magnetic layer provided on one side of the biaxially oriented film (claim 27), more specifically where the magnetic layer is a ferromagnetic thin film (claim 28) or comprises a ferromagnetic metal powder dispersed in a binder (claim 19). Tojo teaches forming a magnetic layer

that comprises either a ferromagnetic thin film or ferromagnetic powder dispersed in a binder on the biaxially oriented film (column 11, lines 18-67).

26. Regarding claim 30, these limitations are met as set forth above for claim 1.

27. Regarding claim 31, wherein the applicant requires the C layer to comprise polyester, this limitation is met when the first film layer is formed on both sides of the base layer, as the first film layer comprises polyester. Further, when a second film layer is utilized, Tojo teaches that the same resins as those utilized for forming the first resin layer can be utilized, which include polyesters (column 10, lines 12-16). In addition, PET is specifically cited by example 3 (column 17-18 table 2).

28. Regarding claim 32, wherein the applicant requires the B and C layer to comprise the same material. This limitation is met when the first film layer is formed on both sides of the base layer, as the both the first film layer and the base layer will comprise biaxially oriented polyester. Further, this limitation is met by example 3 of Tojo, which utilizes PET as the second film layer resin, and PET as the resin of the base layer.

29. Claims 1-9, 11-15, 17-19, 23-24, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (EP0522758) in view of Tojo et al. (US5965233).

30. With respect to the limitations of claim 1, wherein the applicant requires a biaxially oriented film comprising a polyester and a thermoplastic resin, wherein the film has microprotrusions having a height between 2-50nm on its surface, wherein the number of protrusions is between 1e6-9e7/mm^2 on at least one surface.

31. Regarding these limitations, Yamamoto et al. (hereafter Yamamoto) teaches a surface roughened film comprising a thermoplastic polyester resin A (equivalent to applicants claimed polyester) and a thermoplastic resin B, wherein the thermoplastic resin B has a glass transition temperature greater than that of thermoplastic polyester resin A (page 3, lines 18-25). As the thermoplastic resin B has a higher glass transition temperature than thermoplastic polyester A, resin A and resin B are logically not the same. Thus, resin B is equivalent to applicants claimed polymer 2. Further, Yamamoto teaches forming the composition into a biaxially oriented film (page 8, lines 50-55). Thus, Yamamoto meets all of the composition requirements of claim 1.

32. Regarding applicant's requirements in claim 1 as to the number and height of protrusions that are formed on the surface of the film. It is noted that Yamamoto specifically states that protuberances are formed on the surface of the film, resulting in the film having an average surface roughness between 0.001-0.1μ, more preferably 0.005-0.05 μ (5-50nm) (page 5, lines 2-10). It is the examiners position that the average surface roughness of a film is equivalent to the average height of protrusions that extend from the films surface. Thus, when a film having an average surface roughness of 0.005μ is formed, the applicants required protuberance height limitation is met.

33. However, it is noted that Yamamoto fails to teach applicants required number of protrusions.

34. With respect to this deficiency, Tojo et al. (hereafter Tojo) teaches a biaxially oriented polyester film having protrusions on its surface that is utilized as a magnetic recording film (column 3, lines 15-18). Tojo specifically teaches that the number of

protrusions on the surface of the film impacts the running durability and electromagnetic conversion characteristics of the medium. Specifically, the number of protrusions should be in the range of 1e6-1e8 per mm^2. If the number of protrusions falls below 1e6, the running durability will be unsatisfactory, if the number of protrusions is above 1e8, the electromagnetic conversion characteristics are adversely affected (column 8, lines 33-41). 3e6-3e7 protrusions/mm^2 are particularly preferred.

35. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form 1e6-1e8, more specifically 3e6-3e7 protrusions/mm^2 as taught by Tojo on the surface of the biaxially oriented polyester film taught by Yamamoto et al.

36. One would have been motivated to make this modification due to the fact that both Tojo and Yamamoto are utilized for the same purpose (magnetic tape), and the fact that Tojo teaches that a biaxially oriented polyester film having 1e6-1e8, more specifically 3e6-3e7 protrusions/mm^2 does not exhibit problems with running durability or electromagnetic conversion characteristics.

37. Regarding the limitations of claim 2, wherein the applicant requires 3e6-6e7 protrusions/mm^2 on the surface of the film. This limitation is met as set forth above for claim 1, when 3e6-3e7 protrusions are formed.

38. Regarding the limitations of claim 3, and 32 wherein the applicant requires the height of the protrusions to be in the range of 2-30nm. This limitation is met as set forth above for claim 1, as 0.005μ (5nm) is completely encompassed within applicants claimed range.

39. Regarding the limitations of claims 4 and 5, wherein the applicant requires at least some of the microprotrusions, more specifically 30% or more of the microprotrusions to be formed from polymer 1 or polymer 2. Yamamoto teaches that the protuberances are cored with the thermoplastic resin b (polymer 2). Although Yamamoto doesn't specifically teach applicants required 30%, the examiner takes the position that this limitation is met, as from the language of Yamamoto it is logical to believe that most if not all of the protuberances are cored from polymer b. Thus, these limitations are met.

40. Regarding claim 6, wherein the applicant requires polymer 2 to have a glass transition temperature greater then polymer 2. Yamamoto specifically teaches this limitation at page 3, lines 18-25. Thus, this limitation is met.

41. Regarding claims 7 and 8, wherein the applicant requires polymer 2 to be compatible with polymer 1 (claim 7), and to be specifically selected from thermoplastic polyimide, polysulfone, and polyethersulfone (claim 8). Yamamoto et al. teaches that the thermoplastic polyester A is selected from PET, PEN, PCT, and PEOB resins (page 4, lines 12-23).

42. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use PET as the thermoplastic polyester A, as it is taught to be equivalent to the other materials listed as suitable.

43. Further, Yamamoto et al. teaches that the thermoplastic polymer B is selected from polystyrene, polymethyl methacrylate, polycarbonate, polyarylate, polyethersulfone, maleimide, and others (page 5, lines 13-15)

44. Therefore it would have been obvious to one of ordinary skill in the art to utilize polyethersulfone as the thermoplastic polymer B, as it is taught to be equivalent to the other materials listed as suitable for this purpose.

45. It is noted that the applicant lists polyethersulfone, polyimide, and polysulfone as suitable polymers that are compatible with polyethylene terephthalate on page 9 of the instant specification. Thus, the examiner takes the position that the limitations of claims 7 and 8 are met when PET and polyethersulfone are utilized. It is further noted that example 30 of Yamamoto specifically teaches a film composition utilizing a polyimide (maleimide) and PET, which is also listed in the instant specification as a compatible mixture.

46. Regarding claim 9, wherein the applicant requires the polymer 2 to comprise a polyimide. Yamamoto et al. cites maleimide (a known polyimide) in a list of suitable resins for polymer B, as stated above for claims 7-8.

47. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select maleimide as polymer B of Yamamoto et al., as it is taught to be equivalent to the other resins listed.

48. Thus, as maleimide is a known polyimide, the limitations of claim 9 are met when this polymer is selected as polymer b in Yamamoto et al.

49. Regarding claim 11, wherein the applicant wherein the applicant requires polymer 1 to comprise PET. This limitation is met as set forth above for claims 7 and 8.

50. Regarding claims 12-13, wherein the applicant requires the number of protrusions having a height of 50nm or more to be 3000/mm^2 or less (claim 12), more

specifically where the number of protrusions having a height >30nm is 1500/mm^2 or less. It is noted that Yamamoto does not explicitly teach these requirements.

51. However, It has been held that where claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established and the burden of proof is shifted to applicant to show that prior art products do not necessarily on inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC 102 or on *prima facie* obviousness under 35 USC 103, jointly or alternatively. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the *prime facie* case can be rebutted by ***evidence*** showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d at 1255, 195 USPQ at 433.

In the instant case, the examiner believes Yamamoto et al. necessarily meet the limitations of claims 12 and 13 as the film of Yamamoto is: 1. Made of the same composition as required by claim 1, in that it is made up of a polyester and a thermoplastic polymer having a higher Tg then that of the polyester. 2. The protrusions on the surface of the film of Yamamoto are cored by one of the polymers, which is similar to that of the applicants invention 3. The film is manufactured by substantially the same process as that of the method described by the applicant on page 42 of the

instant specification, in that the film is formed by biaxially orienting an undrawn film by strecthing it >1.5 times in both the axial and transverse directions. Finally 4. The film of Yamamoto can be formed of identical polyesters and 2nd polymers as that listed by the applicant in both the claims and the specification. For example, the polyester can be PET (listed by claim 11), and the polymer 2 can be polyethersulfone, polyimide (i.e maleimide), or polysulfone (listed by claim 8)

Thus, in light of the above similarities, and due to the fact that there is no evidence of record showing that the disclosed prior art products do not necessarily possess the characteristics of the claimed product. The examiner takes the position that Yamamoto necessarily meets the limitations of claims 12 and 13, particularly when PET is used as the polyester and polyethersulfone, polyimide, or polysulfone are utilized as polymer b.

52. Regarding claim 14, wherein the applicant requires the film of claim 1 to be laminated as at least one outermost layer of a base layer. Yamamoto specifically teaches an embodiment wherein the film as described above for claim 1 is formed on one or both sides of a base layer (page 3, lines 29-35). Thus, this limitation is met.

53. Regarding claim 15, wherein the applicant requires the laminated film of claim 14 to further have a third layer formed on the opposite side of the base layer, to form a structure having an A layer (film of claim 1), B layer (base layer), and C layer. Yamamoto teaches a specific embodiment where a base layer of PET (equivalent to applicants B layer) is sandwiched between two mixed resin layers (equivalent to

applicants A and C layers), which are made of a mixture of polyethylene terephthalate and maleimide resin (page 24, example 30). Thus, the limitations of claim 15 are met.

54. Regarding claim 17, 31 and 32 wherein the applicant requires base layer comprises polymer 1 or a mixture of polymer 1 and polymer 2 as essential components, more specifically where the base layer and the A layer both comprise polyester (claim 31) or the same material (claim 32). These limitations are met as set forth above for claim 15, as example 30 of Yamamoto clearly utilizes PET as polymer 1 in the outer layers and as the only component in the base layer. Thus, the limitations of claims 17, 31, and 32 are met.

55. Regarding claims 18 and 19, wherein the applicant requires essentially the same limitations as claims 12 and 13, only in a three-layer film. These limitations are met as set forth above for claims 12-15.

56. Regarding the limitations of claims 23 and 24, wherein the applicant requires the A layer to contain 0.001-2% by weight of inert particles having an average particle diameter of 0.01-2μ (claim 23), more specifically 0.01-1% by weight particles having a diameter between 0.01-1μ. Yamamoto teaches adding 0.0001-0.1 % by weight of inert particles that have an average diameter between 0.2-4μ to the polymer composition making up the "A" layer in Yamamoto (page 3, lines 29-35). Thus, as 0.1% by weight and 0.2μ are encompassed by applicant's ranges, the limitations of claims 23 and 24 are met.

57. Claims 1-6, 11, 14-15, 17, 20-22, 27, and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinonome et al. (EP0398075 in view of Tojo et al. (US5965233).

58. With respect to the limitations of claims 1-3, Shinonome et al. (hereafter Shinonome) teaches a biaxially oriented polymer film that comprises a thermoplastic polyester A (equivalent to applicants claimed polymer 1), and a thermoplastic polyamide B (equivalent to applicants claimed polymer 2) (page 3, lines 1-5). The film is biaxially oriented (page 4, lines 10-25). When formed into a film, protuberances are exhibited on the surface of the film. Shinonome teaches that the surface roughn ess of the film is 0.003-0.7μ when the film is utilized as a magnetic recording film. It is the examiners position that Ra is an equivalent to the average height of the protuberances formed on the surface of the film. Thus, when a film having an Ra of 0.003μ is formed, the applicants requirement in claims 1 and 3 as to the height of the protrusions is met.

59. Shinonome fails teach that 1e6-9e7 protrusions, more specifically 3e6-6e7 protrusions are formed on the surface of the substrate, as required by claims 1 and 2.

60. However, with respect to this deficiency, Tojo et al. (hereafter Tojo) teaches a biaxially oriented polyester film having protrusions on its surface that is utilized as a magnetic recording film (column 3, lines 15-18). Tojo specifically teaches that the number of protrusions on the surface of the film impacts the running durability and electromagnetic conversion characteristics of the medium. Specifically, the number of protrusions should be in the range of 1e6-1e8 per mm^2. If the number of protrusions falls below 1e6, the running durability will be unsatisfactory, if the number of protrusions

is above 1e8, the electromagnetic conversion characteristics are adversely affected (column 8, lines 33-41). 3e6-3e7 protrusions/mm^2 are particularly preferred.

61. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form 1e6-1e8, more specifically 3e6-3e7 protrusions/mm^2 as taught by Tojo on the surface of the biaxially oriented polyester film taught by Shinonome

62. One would have been motivated to make this modification due to the fact that both Tojo and Shinonome are utilized for the same purpose (magnetic tape), and the fact that Tojo teaches that a biaxially oriented polyester film having 1e6-1e8, more specifically 3e6-3e7 protrusions/mm^2 does not exhibit problems with running durability or electromagnetic conversion characteristics.

63. Regarding claims 4-5, Shinonome specifically teaches that the protuberances are cored by polymer 2 (page 3, lines 1-5). Thus, the limitations of claims 4 and 5 are met.

64. Regarding claim 6, Shinonome specifically teaches that the thermoplastic polyamide has a higher Tg than the thermoplastic polyester (page 3, lines 17-19). Thus, this limitation is met.

65. Regarding claim 11, Shinonome specifically teaches the use of PET as the thermoplastic polyester. Thus, this limitation is met.

66. Regarding claims 14-15, Shinonome teaches forming a multiplayer structure wherein a film comprising the composition stated above for claim 1 is laminated on one or both sides of a second film to form an AB or ABA structure. As written, claim 15 is

open to layer A and layer C being the same material. Thus, the limitations of claims 14 and 15 are met (page 4 lines 4-10).

67. Regarding claims 17 and 31-32, Shinonome teaches that the base layer of the multilayer system can be made of PET, which is the same as polymer 1 utilized in the coating layer (page 4 lines 4-10). Thus, the limitations of claims 17 and 31-32 are met.

68. Regarding claims 20-21, wherein the applicant requires a specific amounts of polymer 2 in layer A and Layer B. Page 4, lines 4-10 establish that the base of the Ab or ABA structure of Shinonome does not contain any thermoplastic polyamide. Thus, Wb is 0. Further, Shinonome teaches that the amount of thermoplastic polyamide B in the coating layer (A layer) impacts the surface roughness of the layer, wherein as the amount of thermoplastic polyamide is increased, the surface roughness of the film increases, and vice versa. Thus, the examiner takes the position that the amount of thermoplastic polyamide B in the film of Shinonome is a results effective variable.

69. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to change the amount of thermoplastic polyamide in the coating layer of Shinonome in order to achieve a film having a desired surface roughness.

70. Regarding claim 22, Shinonome teaches that inert filer such as Kaolin "may" be incorporated into the coating layer. Thus, it is clear that inert fillers are not included in the coating layer in the most basic embodiment of Shinonome. Thus, the limitations of claim 22 are met.

71. Regarding claim 27, Shinonome specifically teaches the use of the polyester film as a base material for a magnetic tape (page 2, lines 1-3).

72. Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to form a magnetic layer over the polyester film taught by Shinonome et al.

73. Claims 1-2, 9-10, 14-16, and 25-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al. (US5527594) in view of Tojo et al.

74. With respect to claims 1, 2 and 9-10 Kinoshita et al. (hereafter Kinoshita) teaches an optical tape that comprises a polyester film substrate, a coating layer (A layer) formed on one side of the substrate, and a coating layer (b layer) formed on the opposite side of the substrate (column 2, lines 40-52). The film is used as a base for magneto optic recording media (column 24, lines 18-25). The coating layer A is composed of a resin binder and a lubricant (column 4, lines 32-33). Suitable lubricants include vertical protuberance forming resins such as polyamide, polyacrylate, polysulfone, etc... (column 4, lines 40-50). Suitable resin binders include polyesters that are formed from terephthalic acid and ethylene glycol (column 5, lines 43-50 and column 6, lines 7-17). The film is biaxially stretched (column 7, lines 53-67), and protuberances are formed on its surface (column 5, lines 17-29). The average surface roughness Ra of the a layer is 0.005-0.5μm. The examiner takes the position that the Ra of a film is equivalent to the average height of protuberances formed on the surface of the film. Thus, when the A layer of Kinoshita has an Ra of 0.005nm, the protuberance height limitation of claim 1 is met. In addition, Kinoshita teaches that various additive resins may be incorporated into the A layer so as to prevent oligomer deposition. A

suitable additive polymer include poly-ether imide (column 15, lines 32-38 and column 17, lines 17-21)

75. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include polyether imide into the coating composition A of Kinoshita et al. as polyether imide is taught to be equivalent to the other resins listed as suitable for sue as an oligomer deposition prevention agent.

76. The applicant is respectfully reminded that substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. *In Re Fount* 213 USPQ 532 (CCPA 1982); *In Re Siebentritt* 152 USPQ 618 (CCPA 1967); *Grover Tank & Mfg. Co. Inc V. Linde Air Products Co.* 85 USPQ 328 (USSC 1950)

77. Kinoshita fails to teach the required number of protrusions as required by claim 1 and 2.

78. However, Tojo et al. (hereafter Tojo) teaches a biaxially oriented polyester film having protrusions on its surface that is utilized as a magnetic recording film (column 3, lines 15-18). Tojo specifically teaches that the number of protrusions on the surface of the film impacts the running durability and electromagnetic conversion characteristics of the medium. Specifically, the number of protrusions should be in the range of 1e6-1e8 per mm^2. If the number of protrusions falls below 1e6, the running durability will be unsatisfactory, if the number of protrusions is above 1e8, the electromagnetic conversion characteristics are adversely affected (column 8, lines 33-41). 3e6-3e7 protrusions/mm^2 are particularly preferred.

79. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form 1e6-1e8, more specifically 3e6-3e7 protrusions/mm^2 as taught by Tojo on the surface of the biaxially oriented polyester film taught by Kinoshita.

80. One would have been motivated to make this modification due to the fact that both Tojo and Kinoshita are utilized for the same purpose (magnetic tape), and the fact that Tojo teaches that a biaxially oriented polyester film having 1e6-1e8, more specifically 3e6-3e7 protrusions/mm^2 does not exhibit problems with running durability or electromagnetic conversion characteristics.

81. Regarding claims 14-16, wherein the applicant requires a 3 layer laminate comprising the coating of claim 1 (a layer) on at least on side of a base layer (b layer), and a C layer formed on the opposite side of the base layer then the A layer, wherein the A layer side has a surface roughness of 0.2-10nm, and the surface roughness on the C layer side is 1-30nm.

82. Regarding these limitations, Kinoshita teaches a 3 layer laminate comprising a base layer, the A layer as described above for claim 1 on one side of the base layer, and a second layer (equivalent to applicants C layer) on the opposite side of the base layer (column 13, lines 50-60, column 2, lines 40-50). The surface roughness on the a layer side is 0.005-0.5μ, and the surface roughness on the opposite side is $\leq$0.005μ (column 4, lines 30-39, column 13, lines 14-17). Thus, when the A layer has a surface roughness of 0.005μ, the limitations of claims 14-16 are met.

83. Regarding claims 25-26, The examiner interprets the term "composed" in claim 25 as open language that allows for other components aside from polyester and

polyether imide to be present in the film, as it has not yet been established on the record that this terminology is intended to be closed. Thus, in light of this interpretation, the limitations of claims 25-26 are met as set forth above for claims 1, 9 and 16 above.

84. Regarding claims 27-28, wherein the applicant requires a magnetic layer formed on the surface of the film of claim 25, more specifically a magnetic thin film.

85. Kinoshita teaches forming a magneto optic layer on the surface of the 3 layer substrate described above for claim 1, 16, and 25. Specifically a layer of a magneto optic material such as GdFeCo or other material is formed on the substrate surface. Thus, these limitations are met.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhlir whose telephone number is 703-305-0179. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0389.

nju
March 17, 2003

Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700